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WEST POINT CADETS: THEIR MOTIVE TO ACHIEVE(U) MILITARY
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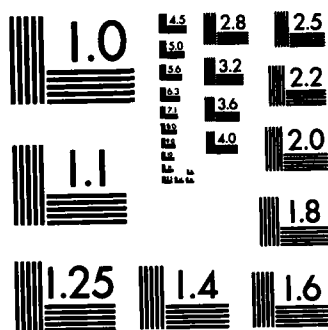
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West Point Cadets: Their Motive to Achieve

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West Point Cadets: Their Motive to Achieve

ABSTRACT

This paper reviews the evidence of West Point cadets' motive to achieve by analyzing the four subscale dimensions Mastery, Work, Competitiveness, and Personal Unconcern of the Work and Family Orientation Questionnaire developed by Spence and Helmreich. Evidence presented includes a factor analysis of the subscale dimensions, comparison of mean scores of the West Point cadets with other high achievers with high educational and career aspirations, and an analysis of variance of the subscale scores of the WOFO by class (freshmen, sophomore, junior, senior) and by sex. The data adds some support to the assumption that the motive to achieve is similar for males and females who have similar educational and career aspirations. Also, the analyses suggest that the environment or length of stay has an effect on the subscale scores of Work and Competitiveness. Implications of the findings for developmental activities and for orientations to future research about male and female cadets are discussed.



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INTRODUCTION

The theory of achievement motivation is an outgrowth of the framework of an expectancy-valence model of task behavior which industrial/organizational psychologists developed in the early fifties (McClelland, 1951; McClelland, Atkinson, Clark, & Lowell, 1953; Atkinson, 1957; 1964). McClelland, Atkinson and their associates identified two specific motives--the need for achievement and the fear of failure. Their models have undergone several revisions since the early fifties, and later authors (Campbell, Dunnette, Lawler, & Weick, 1970; Campbell & Prichard, 1976) suggest that the revisions still are not sufficiently precise to accurately predict performance in an organizational setting. Nevertheless, the models have been useful heuristic devices for identifying specific variables and relationships of theoretical interest to guide future research.

In the last decade, with major changes in the concept of women's roles in society, researchers have become more aware that much of what has been published in psychology, preceding the change in women's roles, was written by males using male subjects rather than females or both sexes regardless of the content interest (see Holmes & Jorgenson, 1971; Dan & Beekman, 1972). More recently, researchers have been investigating achievement motivation taking femininity into account as an added factor to the achievement model (Broverman et. al., 1970; Horner, 1972; and Spence & Helmreich, 1978).

The remainder of this paper reviews the evidence of West Point cadets' motive to achieve by taking into account the new findings of Helmreich and Spence (1978).

Spence and Helmreich (1978) developed the Work and Family Orientation Questionnaire (WFOQ) as a multidimensional scale because they suggest that a unidimensional construct of achievement motivation was not sufficient to account for several behavioral patterns in varied social settings. The WFOQ contains a number of statements describing achievement-related attitudes and behaviors. Initial research with 1800 students at the University of Texas allowed them to isolate four dimensions of achievement motive: 1) Mastery - statements describing a preference for difficult, complex, challenging tasks; 2) Work - statements describing a desire to work hard and to keep busy; 3) Competitiveness - statements concerning the desire to beat others in interpersonal competition; and 4) Personal Unconcern - statements describing concern about the negative reaction of others to one's achievement (Fear of Success).

Spence and Helmreich assumed that the nature of achievement motivation was essentially the same in both females and males. However, they also concluded that significant patterns of sex differences exist between women and men as a function of family and educational aspirations and by differential relationships of the four dimensions to other measures such as psychological masculinity and femininity. The remainder of this paper examines further information about the achievement motive using the

WOFO scale on a large group of high achievers with high educational and career aspirations.

METHOD

SUBJECTS

Women and men cadets at the United States Military Academy were given the WOFO instrument in August 1978. There were 270 women and 3,800 men who took the survey. Researchers at West Point were interested in examining the assumption that the nature of achievement motivation was essentially the same in both female and male cadets. If Spence and Helmreich's assumption was true, then both women and men with high education and career aspirations should have similar scores on the four dimensions of achievement motivation.

ANALYSES

The twenty-three achievement motive statements of the WOFO were factor analyzed separately for 3,800 males and 270 females at West Point using the principal axis solution with oblique rotation to see if four similar factors reported earlier by Spence and Helmreich (1978) were obtained for each sex. The factor loadings after rotation for West Point males and females are presented in Table 1.

INSERT TABLE 1 ABOUT HERE

The results are consistent with the principal findings found by Spence and Helmreich for males. However, the factor pattern for women yielded eight factors which seems to suggest that the WOFO is factorially more complex for women cadets. The data were reanalyzed for women using five factors and the item

loadings were very similar to the reported findings of Spence and Helmreich.

A comparison of reliabilities of the achievement factors for males and females at West Point and in the University of Texas college sample is presented at Table 2.

INSERT TABLE 2 ABOUT HERE

The reliabilities as expressed in Alpha coefficients are satisfactory. The Personal Unconcern factor is the least stable for both data sets. The alpha coefficient is .45 for the West Point sample, and it is .50 for the University of Texas students.

Because the WOFO was administered only at one point in time to all classes of cadets, the researchers were sensitive to the criticism that class and sex differences might be a function of intervening factors (e.g. age, maturation, specific class characteristics, etc.). Fortunately, West Point has very good data on achievement as measured by the quantified whole candidate evaluation used to admit high school graduates as plebe cadets. The leadership potential score, a weighted combination of faculty appraised scores on work and competitiveness, athletic achievement, and extra-curricular achievement is available on each admitted class. Table 3 shows the results for the classes 1979, 1980, 1981, and 1982 with the classes '80, '81, and '82 broken down by sex.

INSERT TABLE 3 ABOUT HERE

The Leadership Potential Score (LPS) has a range of 200 to 800. As the mean scores show there are virtually no differences between males and females across classes. Although it

is important to note that the separate components were not available to differentiate athletic achievement in competitive sports from achievement in other extra-curricular activities, overall, men and women have similar achievement levels at entrance as evidenced by these admissions screening criteria.

Recall Spence and Helmreich (1978) assumed that the nature of achievement motive was basically the same for men and women. However, they attribute some differences in achievement scores to be moderated by education and career aspirations. Table 4 presents the comparison of mean scores in achievements for three groups by sex.

INSERT TABLE 4 ABOUT HERE

The results of Table 4 show that Ph.D. holding scientists had the highest scores for achievement for Mastery, Work, and Personal Unconcern. Scientists had the lowest mean scores for individual competitiveness. West Point cadets had the second highest mean scores for Mastery, Work, and Competitiveness. West Point males were also high on Personal Unconcern; female cadets were slightly lower than other college women on Personal Unconcern. Whereas it is not appropriate to assume that University of Texas college students are not high on the motive to achieve, it is a fair statement to conclude that the Ph.D. scientists and West Point cadets are more homogeneous groups in educational and career aspirations. Thus, without trying to make causal relationships from these descriptive data, there are higher achievement factor mean scores for persons with high educational and career positions and per-

sons with high educational and career positions and persons with high educational and career aspirations on three dimensions. However, Ph.D. scientists were lowest on the competitive factor and West Point cadets the highest.

When the four achievement subscale scores of the WOFO were analyzed by class and by sex interesting results were found. Table 5 shows the results for Mastery.

INSERT TABLE 5 ABOUT HERE

The results of Table 5 indicate that there were differences between classes. There were no differences between sexes for Mastery--further support for Spence and Helmreich's assumptions.

However, because overall significance tests do not provide any information about the pattern of effects, a multiple classification analysis was conducted to determine which classes described preferences for complex, challenging tasks. The results of this analysis are presented in Table 6.

INSERT TABLE 6 ABOUT HERE

The data indicates that the classes of 79 and 81 are less positive than the classes of 80 and 82 in preferences for complex, challenging tasks. The unique class of 80 is the most positive about complex challenging tasks.

The results of the Competitiveness dimension, given at Table 7, indicate that there are differences between classes and between sexes.

INSERT TABLE 7 ABOUT HERE

The multiple classification analysis by class by sex

is presented at Table 8.

INSERT TABLE 8 ABOUT HERE

The data show that three of the classes, 79, 80, 81 scored low on competitiveness. The class of '82, the plebes, are most competitive. Perhaps the socialization influence of cadet environment and training has had an impact the longer a cadet remains at West Point. It is also interesting to note the differences between the sexes. Clearly, women see themselves less competitive than the men.

One would reasonably expect that women should score high on concern about the negative reactions of others to their achievement. The evidence is shown in Table 9.

INSERT TABLE 9 ABOUT HERE

The data illustrates differences between classes, but no main effect for sex--again similar Spence and Helmreich's assumption. A multiple Classification Analysis was used to look at class year differences (See Table 10). The "Fear of Success" hypothesis, which has been repeated in studies of civilian college women is not confirmed here.

INSERT TABLE 10 ABOUT HERE

The pattern of differences is not linear. The greatest difference in means is between the freshman and sophomore classes. Plebes are the least concerned about the negative reactions to others to their achievement. The yearlings (sophomores) are most concerned about negative reactions of others. Interestingly, there is a peer rating evaluation which occurs at the end of yearling summer training. This is the only time each cadet is rated by his or her peers.

The results of the Work subscale dimension, given at Table 11, indicate that there are differences (main effects) between classes and between sexes.

INSERT TABLE 11 ABOUT HERE

A further inspection of the differences is given at Table 12.

INSERT TABLE 12 ABOUT HERE

Plebes show the highest motive to work hard and keep busy, with the linear difference becoming more negative across classes. Perhaps this is some testimony to the tremendous stress of the fourth class system. The data also show women's scores are higher on desire to work hard and keep busy.

DISCUSSION

Overall the data add support to the assumption that the motive to achieve is basically the same for men and women when they have similar educational and career aspirations. This is an important finding for the Academy which is committed as an institution to the full utilization of the integrated services of men and women. On two dimensions, Mastery and Personal Unconcern there are no sex differences between cadets with high educational and career aspirations. Although class differences were noted, there is a linear trend for the differences noted for Work and Competitiveness.

There are other personal attributes which account for differences in achievement motivation between men and women: family background, attitudes toward women in society, and

measures of psychological masculinity and femininity (PAQ).

Research to examine the impact of PAQ and AWS on cadets' motives to achieve is underway. Researchers at the Academy are also looking for relationships between the motive to achieve and dual careers in the military after graduation.

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TABLE 1

Rotated Factor Matrices of Achievement items for Male and Female Cadets
at West Point*

FACTOR

1 TEM	MASTERY		WORK		COMPETITIVENESS		PERSONAL UNCONCERN	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
1 M	<u>-.67</u>	<u>.61</u>	-.06	-.10	.04	-.19	.17	-.02
2 W	.03	.00	<u>-.35</u>	<u>-.48</u>	.08	-.09	.04	-.01
3 C	.17	<u>-.65</u>	-.05	.06	<u>.57</u>	-.27	-.21	-.09
4 M	<u>.31</u>	<u>-.52</u>	.07	.00	.33	-.13	.00	-.23
5 PU	.11	-.02	.00	-.04	-.03	.03	.16	.01
6 M	-.28	<u>.41</u>	.02	.10	.05	<u>.34</u>	.13	.22
7 C	.00	.01	.06	-.05	<u>.62</u>	<u>-.71</u>	.13	.11
8 PU	-.02	.07	.07	.10	.07	-.29	<u>.65</u>	<u>.56</u>
9 W	-.07	.02	<u>-.65</u>	<u>-.44</u>	.08	.08	.07	.09
10 M	<u>.43</u>	<u>-.60</u>	-.23	-.10	-.03	.06	.19	.07
11 PU	.06	.03	-.16	-.01	-.10	-.26	<u>.64</u>	<u>.56</u>
12 M	.19	.25	<u>-.54</u>	<u>-.46</u>	.02	-.10	.08	.10
13 M	<u>.22</u>	<u>-.46</u>	-.33	-.08	.14	-.08	.04	.04
14 W	-.14	.12	<u>-.70</u>	<u>-.60</u>	.12	-.14	-.04	-.16
15 C	-.03	-.28	-.16	.01	<u>.63</u>	<u>-.49</u>	-.09	.12
16 M	<u>.59</u>	<u>-.30</u>	.00	.02	.03	.13	.14	<u>.43</u>
17 PU	.03	.03	.22	.10	.00	.02	<u>.57</u>	<u>.46</u>
18 W	-.05	-.01	<u>-.68</u>	<u>-.73</u>	-.12	.21	-.08	.01
19 W	.29	-.20	<u>-.56</u>	<u>-.44</u>	.03	.02	-.03	.29
20 W	.03	-.05	<u>-.71</u>	<u>-.74</u>	.11	.07	-.04	-.03
21 C	.17	.14	.17	.02	<u>.60</u>	<u>-.68</u>	.28	.18
22 M	<u>.56</u>	-.00	-.01	-.15	.11	.02	.01	<u>.55</u>
23 C	.08	-.27	-.15	-.12	<u>.61</u>	<u>-.61</u>	-.11	-.13

*Oblique rotation has been used in this sample because Spence & Helmreich did not consider the factors to be orthogonal.

TABLE 2

COMPARISON OF RELIABILITIES
FOR
WEST POINT CADETS AND OTHER NORMED GROUPS

			ALPHA*
WEST POINT CADETS			U. TEXAS STUDENTS
<u>DATA</u>			<u>DATA</u>
MASTERY	M	.61	.61
	F	.53	.62
	ALL	.59	
WORK	M	.72	.66
	F	.62	.63
	ALL	.71	
COMPETITIVE	M	.63	.76
	F	.63	.72
	ALL	.63	
PERSONAL UNCONCERN	M	.45	.50
	F	.44	.50
	ALL	.45	

*alpha--not the standardized item alpha.

TABLE 3

LEADERSHIP POTENTIAL SCORE
OF CANDIDATES
ADMITTED TO WEST POINT
BY CLASS AND BY SEX

<u>CLASS</u>	<u>MALE</u>	<u>FEMALE</u>
1979	603*	N/A**
1980	607	601
1981	607	594
1982	602	597

* Mean LPS Scores Range 200-800 possible

** There are no women in the Class of 1979

SOURCE: Mr. J.W.Houston, Office of Institutional Research,
USMA, West Point, NY

TABLE 4

COMPARISON OF MEAN SCORES
IN ACHIEVEMENT FACTORS
BY SEX - BY GROUP

		<u>Ph.D SCIENTISTS</u>		<u>WEST POINT CADETS</u>		<u>U TEXAS COLLEGE STUDENTS</u>		<u>MAX SCORE</u>
		MEAN	SD	MEAN	SD	MEAN	SD	
MASTERY	M	21.27		20.60	4.36	19.26	4.40	32
	F	24.24		21.40	4.08	18.04	4.60	
WORK	M	20.73		20.91	3.05	19.80	3.03	24
	F	22.72		21.74	2.38	20.30	2.86	
COMPETI- TIVENESS	M	11.98		14.83	3.15	13.63	3.82	20
	F	10.76		14.50	3.27	12.20	3.79	
PERSONAL UNCONCERN	M	11.46		10.15	2.72	10.02	2.81	16
	F	11.12		9.88	2.81	10.24	2.74	
SAMPLE SIZES	M	125		3474		606		
	F	25		253		849		

TABLE 5

ANOVA* MASTERY SUBSCALE
BY CLASS-BY SEX

<u>SOURCE</u>	<u>MEAN SQUARE</u>	<u>F</u>	<u>SIGNIFICANCE OF F</u>
MAIN EFFECTS	166.96.	8.92.	.001
CLASS	182.14.	9.73	.001
SEX	67.53	3.61	.06
2 WAY INTER- ACTION CLASS-SEX	15.61	0.83	.43

*HIERARCHICAL approach (option 10) invokes the stepdown procedure. The sum of squares associated with the main effect of the first variable is not adjusted for any other variables. The sum of squares for the main effect for the second variable considered is adjusted only for the first variable and so on with each additional variable considered (see Nie et.al. 1970).

TABLE 6

MULTIPLE CLASSIFICATION ANALYSIS
-MASTERY-
BY CLASS

<u>VARIABLE & CATEGORY</u>		<u>UNADJUSTED</u> <u>DEV'N ETA</u>	<u>ADJUSTED FOR</u> <u>INDEPENDENT VARIABLES</u> <u>DEV'N ETA</u>
CLASS	N		
79	823	-.58	-.54
80	788	.51	.50
81	1010	-.21	-.22
82	1098	.26	.24
		.09	.09

TABLE 7

ANOVA COMPETITIVENESS SUBSCALE
BY CLASS-BY SEX

<u>SOURCE</u>	<u>MEAN SQUARE</u>	<u>F</u>	<u>SIGNIFICANCE OF F</u>
MAIN EFFECTS	112.08	11.52	.001
CLASS	139.44	14.33	.001
SEX	58.94	6.06	.014
2 WAY INTER- ACTION CLASS-SEX	.92	0.09	.910

TABLE 8

MULTIPLE CLASSIFICATION ANALYSIS
 -COMPETITIVENESS-
 BY CLASS - BY SEX,

<u>VARIABLE & CATEGORY</u>		<u>UNADJUSTED DEV'N ETA</u>	<u>ADJUSTED FOR INDEPENDENT VARIABLES DEV'N ETA</u>
CLASS	N		
79	823	-.36	-.40
80	788	-.11	-.10
81	1010	-.14	-.13
82	1098	.48	.49
		.110	.11
SEX			
MALE	3467	.02	.03
FEMALE	252	-.33	-.47
		.03	.04

TABLE 9

ANOVA
-PERSONAL UNCONCERN-
BY CLASS-BY SEX

<u>SOURCE</u>	<u>MEAN SQUARE</u>	<u>F</u>	<u>SIGNIFICANCE OF F</u>
MAIN EFFECTS	24.78	3.39	.009
CLASS	28.30	3.87	.009
SEX	15.58	2.13	.144
2 WAY INTER- ACTION CLASS-SEX	9.81	1.34	.26

TABLE 10

MULTIPLE CLASSIFICATION ANALYSIS:
PERSONAL UNCONCERN BY CLASS

<u>VARIABLE & CATEGORY</u>		<u>UNADJUSTED DEV'N ETA</u>	<u>ADJUSTED FOR INDEPENDENT VARIABLES DEV'N ETA</u>
CLASS	N		
79	823	.02	.01
80	788	-.05	-.04
81	1010	-.20	-.19
82	1098	.20	.20
		0.06	0.06

TABLE 11

ANOVA
-WORK-
BY CLASS-BY SEX

<u>SOURCE</u>	<u>MEAN SQUARE</u>	<u>F</u>	<u>SIGNIFICANCE OF F</u>
MAIN EFFECTS	118.39	13.83	.001
CLASS	107.33	12.54	.001
SEX	98.54	11.51	.001
2 WAY INTER- ACTION CLASS-SEX	11.91	1.39	.25

TABLE 12

MULTIPLE CLASSIFICATION ANALYSIS:
 -WORK-
 BY CLASS-BY SEX

<u>VARIABLE & CATEGORY</u>		<u>UNADJUSTED DEV'N ETA</u>	<u>ADJUSTED FOR INDEPENDENT VARIABLES DEV'N ETA</u>
CLASS	N		
79	823	-. 49	-. 45
80	788	- . 16	-. 17
81	1010	. 15	. 14
82	1098	. 35 0. 11	. 33 0.09
SEX			
MALE	3467	-.05	-.04
FEMALE	252	.75 0.07	.61 0.06

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